Joint Tactical Radio System Request for Information (RFI)

JTRS2000-RFI-01

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DESC: Request for Information/Market Research - The U.S. Army Communications-Electronics Command (CECOM) Acquisition Center, Washington, DC, on behalf of the Joint Tactical Radio System (JTRS) Joint Program Office (JPO), is soliciting the views of industry concerning the acquisition of software applications to operate within the constructs of the JTRS Software Communications Architecture (SCA). The JTRS JPO will use the information received in response to this RFI as a data point to evaluate, revise, or adjust its strategy for acquiring communications waveform and application software during the next phase of the program.

Purpose

The Government intends to procure a family of affordable tactical radios to meet military communications requirements in a competitive, non-developmental environment by capitalizing on commercial technologies and processes. The Software Communications Architecture (SCA) makes it possible to procure radio applications such as tactical waveforms independently of the hardware. A major goal of the JTRS program is to use these waveforms across the family of JTRS radios regardless of manufacturer.

JTRS Background

JTRS hardware and software products will conform to a single Software Communications Architecture (SCA) currently under development by the Modular Software Radio Consortium (MSRC). The SCA version 1.0 was released 17 May 2000, and SCA version 2.0 is scheduled for release on 3 November 2000. It is envisioned that the core software provided by the JTR Set will provide standard services to manage the radio system and the radio unique applications will be implemented using the services of the JTRS Operating Environment (JOE). JTRS Sets will be initially delivered with a set of waveforms and other applications already installed. The hardware manufacturer will use either government provided software or software for which the government has already negotiated a license for these initial deliveries. In this scenario, the hardware manufacturer will be responsible for integration of the software, and the software manufacturer will be responsible for providing technical support. Subsequently, the government, the hardware manufacturer, or a third party may install additional waveforms in the delivered hardware.

JTRS will be used in the military environment to provide command, control, and communications with their forces via voice, video, and data media forms during all

phases of military operations. The JTRS program will field supportable systems for the planned operational environments that will meet readiness requirements at an affordable Life Cycle Cost (LCC).

References

There are several references that can be used to obtain additional information on JTRS and potential JTRS requirements. These include the following:

(1) JTRS program information and JTRS SCA Version 1.0 are located on the JTRS website - http://www.jtrs.sarda.army.mil
(2) JTRS Mission Needs Statement and Operational Requirements Document are located on the Joint Chiefs of Staff/C4 Systems (J6) home page - http://www.dtic.mil/jcs/j6/jtr_announce.html
(3) Joint Technical Architecture through the Defense Information Systems Agency (DISA) website - http://www-jta.itsi.disa.mil
(4) Programmable Modular Communication System (PMCS) Guidance Documents located on the JTRS website in the archives section

Questions

Provide a strategy of independently and competitively acquiring (either outright or through a license) waveforms and other application software answering the following questions. Key issues to consider in the responses are the ability to develop software independent of the radio manufacturer, operation and portability of software objects to multiple hardware platforms, certification of the software in meeting SCA compliance, and testing of the final product.

- Given a wide variety of hardware devices and to facilitate easily installed applications, what should be provided by the application developer? Consider but do not limit the response to the following: source code, object code, universal waveform diagram languages, waveform definition languages, commercial modeling and simulation languages, Software Performance Specification, Technical Manuals, Interface Control Documents, Software Design Documents, etc.? Provide rationale for the responses.

- Is there an ideal processor type to target the application software against given the probability that hardware implementations will be a combination of processor types such as FPGAs, DSPs, and GPPs? Provide rationale and identify portability implications with your answer.

- Developers may want to reuse software objects, like a vocoder, that have been previously created for other applications. Address the benefits and potential problems of a Government sponsored object reuse library? In the case of licensed waveform, address willingness to license software objects separately.

- What are the risk(s) associated with multiple independent acquisition paths to acquire application software and hardware? How would you mitigate these risks? In addition to the constructs of the SCA, are there other guidelines required to ensure that independently developed hardware and software are compatible and can be integrated together? What process should be used to resolve integration issues and determine whether a particular problem is a hardware or software issue?

- Identify the risks or benefits to acquiring, integrating, and maintaining JTRS application software that result from specifying coding standards, compilers, software tools, operating systems, and High Order Languages in an application acquisition?

- What methods, procedures, and tools are available or could be developed to certify waveform and other application software as being SCA compliant, and to assess the ease of integrating it into independently developed hardware?

- What is your view of the extensibility and growth potential of the SCA? How should the impacts of future changes to the Software Communications Architecture be addressed? How should backward compatibility issues between SCA versions be addressed? How long should previous versions of the SCA be supported?

- From a business case perspective, what are the advantages and disadvantages of independent software acquisition? If there is an alternative business case, identify and provide supporting rationale. Consider these factors: who funds the development (government, industry, mixed funding); the resulting data rights (full, government purpose, restricted); and the need to maintain the delivered product. What combination of factors (others may be added) provides the best chance of providing high quality software within a reasonable schedule and cost that is compatible with legacy systems? Which combination of factors provides the best chance of producing more robust applications that take advantage of increasing hardware capability?

- How can RF cosite interference mitigation requirements be implemented in waveform software independent of hardware platforms?

This notice should not be construed as a request for proposal (RFP) or a solicitation of an offer. Responses shall be submitted electronically (Microsoft Word 97 preferred). Respondents should reference JTRS2000-RFI-01 and provide a FAX number, an e-mail address, a point of contact, by name, and their Commercial and Government Entity (CAGE) number with their submission. A formal RFP or other solicitation regarding this announcement will not be issued. All responses to this request should be submitted by 7 August 2000, and should be forwarded to Ms. Donna Harris, JTRS JPO, 1700 N. Moore Street, Suite 1000, Arlington, VA, 22209-1901 using the following email address; JTRS.contracts@sarda.army.mil.